# Code 584 Bimonthly Status Rollup

## *June/July, 2005*

### Adaptive Sensor Fleet (ASF)

Mark L. is working on longer-term ASF scenarios and investigating a potential role for haptic technology.

### ASIST

Edwin F. completed his efforts to make a portion of the ASIST website publicly available, removing all ITAR-controlled data from the public portions of the site.

### Autonomy Test Bed (ATB)

Vuong Ly has begun implementing the ATB, which is intended to demonstrate end-to-end communication between GMSEC and the Core Flight Executive (cFE), as well as spacecraft autonomy. He has completed the ASIST-to-GMSEC interface setup as well as documentation for the process. He has installed and configured cFE software for the ATB, completed the Livingstone installation, and documented the process.

### Control Center in a Classroom (CCC)

Pat H. reports that CCC successfully supported the Sub-SEM sounding rocket flight on June 8 and the SEM-B balloon flight June 18. Pat developed the database, web displays, and telemetry front end code used for CCC's successful support of the Wallops Flight Facility Small-scale Educational Rocketry Initiative (SERI) launch on July 21.

### EOSDIS

### Exploration Initiative (EI)

Jeff F. began supporting the C3I Information Model team

### GLAST

### GMSEC

Connie H. worked on prototype message subscriptions and displaying GMSEC-published messages using LabView.

## GPM

Tim R. has a consultant role for Greg Menke's effort to improve performance of the CFDP implementation based on his software library. A 400% increase in performance has been achieved thus far.

## HST

Barry N. reports that he has been continuing to develop the technical changes required for inclusion in the HST operational health and safety documentation, including additions for the Two Gyro Science (TGS) software and the Wide Field Camera 3 (WFC3), which is a new science instrument slated for installation on HST during SM4. The TGS software development is part of the HST "Life Extension Initiatives" (LEI) effort within the Project. Barry is also studying the need to update the HST Servicing Mission(s) Systems and Operations Requirements Document (SORD) for SM4.

Barry also reports that for the last several months, the HST Operations Project has been entering operational anomalies into the Goddard Spacecraft Orbital Anomaly Reporting System (SOARS) in accordance with GPR 5340.2 "*Control of Nonconformances*" and 441-PG-5340.2.1 "*Anomaly Reporting for HST Operations and Test*".

Barry attended a Code 400 "Readiness Meeting" on August 16 hosted by the Code 400 Directives Manager to present the status of the Center (ISO) Recertification Audit scheduled for September 26-30, 2005.

Mike P. reports that HST will transition to the Two Gyro Science mode one week later than originally planned. Planned transition is now 8/28. The change was made to allow for a possible replan of high priority lunar observations to be made the previous week.

## JWST

Alan C. reports that the JWST IGSE Help Desk web site is now fully operational. Alan recently presented the site's operations to the first group of users and is supporting help desk operations by monitoring phones, e-mail, and the web site to handle technical problems and requests for assistance as they came in. Alan will also be traveling to Germany to support installation of the IGSS SIDU II system.

Pat H. has completed compression manager and compression FPGA test software, as well as House Keeping (HK) card test software in support of JWST ICDH development.

## LRO

LRO is planning to use Tim R.'s CFDP library on both the flight and ground segments. Tim has submitted a Form 1679 – *Disclosure of Invention and New Technology* for the CFDP library. Tim is supporting the project as a consultant for Solid-State Recorder design and for integration of CFDP into flight architecture.

## LWS/SET

## SDO

Tim R.'s CCSDS Telecommand system is being used to support spacecraft development and working well.
Edwin F. has been providing technical support to a new SDO hire, Song Omkar of Honeywell. Song will be the ASIST/FEDS sys admin for the SDO MOC.

## Space Link Extension (SLE)

Tim R. is developing an SLE-CLTU (the new CCSDS standard for transferring spacecraft commands from the Control Center to the Ground Station) implementation. SLE-CLTU capability has been added to the ASIST/FEDS and delivered to the IMAGE Control Center. An SLE-CLTU software library has been produced, with intended reuse in ITOS. Tim has also created a document to help people understand the SLE-CLTU protocol entitled *SLE-CLTU Service Overview*, as well as a User's Guide and Design Guide. Tim will be testing the SLE-CLTU command capability with the Deep Space Network's DTF-21 facility.

## Software Process Improvement (SPI)

Jeff F. reports that the SPI Measurement Team will develop a tool to make using the SPI Branch Status Reporting template easier.

## ST-5

Tim R.'s CCSDS Telecommand system is working well in the integration and test phase of ST-5 development. Tim supported a successful Control Center effort to provide a spacecraft command capability via both the Ground Network and Deep Space Network. Edwin developed a tool for the ST-5 MOC FOT which will allow them to selectively filter limit alarm messages from the ASIST Event Log.
The ASIST team released FEDS 9.3.n for the ST-5 MOC. This release contains Level Zero Processing, which is a specific ST-5 MOC requirement. The delivery of this LZP capability by the ASIST Team is a major accomplishment.

## Swift

## Other technical activities/accomplishments

Jeff F. submitted the proposal "*A Framework for Scalable Control Systems*" for Core Capabilities program funding.
Connie H. attended the LabView training courses "*Step by Step Data Acquisition*", "*Integrated Analysis Capabilities*", and "*LabVIEW and IDL*".
Mark L. is reviewing the final NASA Workshop report on Human Mars mission contamination challenges. Mark also wrote an AAAS chapter on philosophical aspects of astrobiology, including epistemological challenges of extrapolating terrestrial life knowledge, discerning an independent origin of life, and assessing biological status of areas of interest.

Mike P. was part of the Two Gyro Science team which received a GSFC Award of Excellence.
Edwin F. assisted Charles Fan, a summer student working for Dr Vladimir Lumelsky, on recovering data from backup tapes which were over a decade old. Charles was working on a Code 588 Robotics Project. Edwin also assisted Vuong Ly with his efforts on the Autonomy Test Bed development.

## Outreach/Non-technical activities

Alan C. attended the Ruby Griffith Awards Ceremony where the MAD Theater production of "Dancing at Lughnasa" received a nomination.
Vuong L. served as a liaison for a group of kids from the Falls Church public school system at the Goddard Visitor Center. He assisted them with building a model rocket out of newspaper and building a re-entry vehicle with straws.

## Kudos

Alan C. offers kudos to **Chris Durachka** and **Valerie Ward** for their outstanding support in the development of the IGSE help desk.
Vuong L. offer the following kudos:

- **Ryan Turner / John Donohue** for making the transition from college to full time job so simple
- **Edwin Fung** for helping me with getting started with ASIST
- **Jeff Ferrara** for being my buddy/mentor
- **Donna Schimming** for great advice and suggestions

Eve R. offers kudos to **Barbara Milner** and **Valerie St. John** for doing an excellent job performing SET GDS Lead duties while she was out on maternity leave.
Edwin offers kudos to:

- The entire **ASIST Team** for completing the delivery of the Level Zero Processing capability (of the FEDS) for the ST-5 MOC.
- The effort of **Esther Woodward** and **Loc Nguyen** in completing the transition of the ASIST website to become a publicly-available website.
- The sys admin support from **Loc Nguyen**, especially with regard to the re-installation of the SSL PatchLink clients.